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PACIFIC * TELESIS
Group

May 26, 1994

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

EX PARTE

William F. Caton
Acting Secretary
Federal Communications Commission
Mail Stop 1170
1919 M Street, N.W., Room 222
Washington, D.C. 20554

Dear Mr. Caton:

Re: *PP Docket No. 93-253, Competitive Bidding*

On behalf of Pacific Bell, please find attached the written exparte presentation from Paul Milgrom, Stanford University, to Evan Kwerel, Office of Plans and Policy, concerning the above-referenced proceeding. Please associate this material with this proceeding.

Two copies of this notice are being submitted to the Secretary of the FCC in accordance with Section 1.1206(a)(1) of the Commission's Rules.

Please stamp and return the provided copy to confirm your receipt. Please contact me should you have any questions or require additional information concerning this matter.

Sincerely,



Attachment

cc: Evan Kwerel

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May 25, 1994

Alan Caimporcero
Pacific Telesis
1275 Pennsylvania Avenue N.W.
Suite 400
Washington, DC 20004

Dear Alan:

Enclosed is the draft of my letter to Evan Kwerel that was approved to Jim Tuthill and Jeff Thomas. Please arrange to have it delivered and make the appropriate *ex parte* filing. Thanks.

Sincerely yours,

A handwritten signature in black ink, reading "Paul Milgrom". The signature is written in a cursive style with a large, stylized "P" and "M".

cc: Jim Tuthill

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May 25, 1994

Dr. Evan Kwerel
Federal Communications Commission
1919 M Street, NW
Washington, D.C. 20054

Dear Evan:

I am writing to follow up our phone conversation of Monday, May 16, when you raised some questions about the details of how the broadband auctions would be conducted. I address four of the issues you raised in this letter. These concern first, the possibility of substitution among licenses in the upper and lower bands, second, the desirability of isolating the auctions in which any preferences are provided for designated entities, third, the question of whether bidders should be allowed to bid actively for combinations of properties that they are not eligible actually to acquire, and finally, the practical feasibility of conducting large scale auctions with many licenses for sale simultaneously.

1. Substitutability Between Upper and Lower Bands

My conversations this week with knowledgeable people at Pacific Bell confirm the impression you had expressed last week: the upper band is expected to be a poor substitute for the lower band in providing PCS services. There are several reasons for this, two of which are noted here.

First, as was repeatedly emphasized in the PCS panels at the FCC on April 11 and 12, speed of entry will be a crucial determinant of the success of new PCS entrants. With the cellular incumbents moving to upgrade their services and expand their capacities through digital technologies and with consumers signing up for wireless services in record numbers, late entrants to the PCS market can expect to be at a serious disadvantage in acquiring customers. In addition, the leading competitors for PCS licenses are already incurring significant expenses preparing for entry into this business. Late entry thus means both reducing and delaying the flow of revenues, greatly reducing the present values of net cash flows. In terms of speed of entry, firms with licenses in the lower band will have a distinct advantage. The manufacturers plan to have equipment available much earlier for the lower band than for the upper band.

Besides arriving later, handsets for the higher spectrum bands will likely be costlier. The separation between the upper and lower bands and between those and the cellular bands is large enough that a multimode handset that could operate in these three ranges of spectrum would require separate radio components for each. In particular, that would create a serious cost disadvantage for a mixed

system that used the upper band in some geographic regions and the lower band in others.

This is not to say that it would be impossible for a competitor to assemble more than one ten megahertz license to create an operational 20 or 30 megahertz combination of spectrum. That might indeed be technically feasible. But such a system would probably be a late entrant and its handsets would either not interact with PCS systems in the lower band or would be at a substantial cost disadvantage. So long as the Commission retains its current spectrum allocation or increases the available licensed spectrum in the lower band, the spectrum in the upper band will be a markedly inferior substitute for that in the lower band.

As you know, Professor Wilson and I have emphasized the importance of including all the broadband licenses in a simultaneous auction. Our reasoning was that this would allow the bidders to evaluate the opportunities for substitution among all the licenses for economies of aggregating licenses in different regions or different parts of the spectrum band. I have not changed my position on this; it would substantially undermine the purpose of the auction if the Commission were to go far down the road of replacing the bidders' judgments about which licenses are good substitutes or complements with their own judgments. Still, in view of the preceding observations, it does seem likely that the losses from splitting the lower and upper bands into separate auctions are unlikely to be large provided that the amount of licensed spectrum in the lower band is not reduced.

2. Auctions With Preferences for Designated Entities

I share your concern about any procedural matters that might delay licensing. Delays will add to the advantages of existing cellular providers and lead to unnecessary and undesirable concentration in the eventual wireless industry. Delays will also reduce profits or lead to losses among the new PCS providers since, as indicated above, the principal competitors have already sunk significant investments in preparing for the wireless future.

I would simply urge what you already know: It is in the interest of consumers, PCS providers and the public in general to have licenses issued and services introduced on as broad a portion of the available spectrum as possible and with as little delay as possible. If there is a significant possibility that litigation could delay any auction involving licenses set aside or carrying preferences for designated entities and if that delay could be avoided by auctioning the affected licenses separately, then it would be prudent to do so in order that licenses can be awarded and services expeditiously begun on the remaining spectrum.

3. Bidding Restrictions

As you noted in our phone conversation, the demonstration software package that we sent to you with our comments on the NPRM last fall included certain limits on the eligible bids. In particular, bidders could not bid for combinations of licenses that they were not eligible to acquire on account of the Commission's spectrum restrictions. You asked me in our phone conversation why that restriction

was included and what problems, if any, I would anticipate if such restrictions were not imposed.

Our conversation actually focused on just one of the two restrictions of that kind: the restriction against acquiring more than 40 megahertz of PCS spectrum in a given geographic region. Our software, however, was designed to enforce that limit including cellular spectrum as well. What purpose might such restrictions serve?

In the simultaneous auction design, a bidder who is permitted to bid on licenses that it is ineligible to acquire can use that possibility in several ways. One is to delay making serious bids in other markets while still retaining its eligibility under the activity rule, or to force the pace of bidding by regional bidders in markets where it has a particular interest. Those particular uses do not seem particularly dangerous to the public interest, though in theory they could delay the progress of the auction slightly.

A second, more troubling possibility is that such bids could be used as signals. For example, suppose that bidder A faces tough competition from bidder B in MTA #1 — its home market — and wants to retaliate. If A and B are the leading bidders for the two 30 megahertz licenses in MTA #2, then bidder A might send a signal by bidding against B in MTA #2. It would be plain to both parties that A's bid was not made because it actually wants to acquire the second license, since A is ineligible to acquire it. If B raises the bid again to become the new leader, then the retaliation will have been costly to B and B may be deterred from further bidding in MTA #1. Another possibility is that A may be aware that B faces budgetary limitations, and it might aim to drive up the price of some licenses that B acquires in order to make it a less effective competitor for other licenses.

Of course, some such strategies are possible even if bidding is restricted so that competitors can bid only on licenses for which they are eligible, but unrestricted bidding increases the scope for signaling and the clarity of the signal. It does this by allowing bids that clearly are not serious ones.

4. Scale of the Auctions

I would like to reaffirm what Professor Wilson and I argued in commenting on the NPRM. The scale of an auction for all the broadband licenses does not pose a problem of excessive complexity for either the bidders or the auctioneer.

From a bidder's perspective, the complexity of the bidding problem results from that of the resource allocation problem, not from the auction design. In an auction with several rounds of sealed bids, if a bidder is interested in licenses in several geographic areas with no value interdependencies or budget restrictions to connect them, then the bidder can bid for each area until the price reaches or exceeds the bidder's value. Nothing could be simpler. If, however, there are value interdependencies or budget restrictions, then nothing the auction designer can do would free the bidder from having to account for these in evaluating alternative license combinations. It is true that the auction designer could simplify the bidder's problem by adopting a policy that rules out well informed bidding on some combinations. Such a cure could be worse than the disease: it risks blocking attempts to assemble what could be some of the most valuable license combinations.

With multiple rounds of sealed bids and daily bidding, as the Second Report and Order envisions, the bidders would have ample time to plan their bids and revise their strategies as information emerges during the auction. Most bidders will have a small number of business plans that they have evaluated in their preparations for the auction. Bidding will be done by evaluating the cost of acquiring the relevant licenses and clearing the spectrum to implement those plans. If some license prices are unexpectedly low, planning staffs may evaluate alternative business plans based on acquiring that cheap spectrum. For sophisticated bidders with large sums at stake, the complexity of the bidders' problems is quite manageable. A simultaneous auction of all the licenses under the current spectrum allocation for broadband PCS would not strain the bidders' capacities.

Nor would an auction of all the broadband licenses exceed the capabilities of the potential auction contractors. Some of them, particularly the stock exchanges, have experience with receiving and processing much larger numbers of daily orders than the auction would demand. They have procedures to provide bid security, keep customers informed, and verify the accuracy of the bids being posted.

Thank you for affording me the opportunity to express my opinions again. I will look forward to our continued dialogue.

Sincerely yours,

A handwritten signature in black ink, reading "Paul Milgrom". The signature is written in a cursive, flowing style with a large initial "P" and "M".